North American Drought Monitor – December 2005

Canada: Monthly precipitation across British Columbia was generally below or well below average through the interior, while near average in coastal areas. The Peace River region received below 50 percent of average December precipitation, prompting further expansion of abnormally dry (D0) conditions in the northeast. The snow water equivalent measured at all automated snow pillow locations was below or well below average at the end of December.

Alberta generally received well below average December precipitation, with many stations in central areas recording less than 20 percent of average. Abnormally dry (D0) and moderate drought (D1) conditions in the northern regions of the province expanded southward and westward. Snow accumulations in the mountains were generally below average at the end of the month. With little or no snowpack in the Plains region of the province, the open conditions in the south allowed some producers to graze livestock on pastures. Saskatchewan generally received below average monthly precipitation, with near average amounts in the north and northeast agricultural region. Several stations in the southwest recorded below 30 percent of average, while a few stations in the southeast recorded below 60 percent of average precipitation. Monthly precipitation was generally near or above average in Manitoba, with northern areas receiving higher amounts.

Precipitation in Ontario was quite variable, ranging from greater than 200 percent of average on the north shore of Lake Superior to less than 20 percent southeast of Lake Huron. Most stations in northwestern Ontario recorded above 80 percent of average, with the exception of several near Thunder Bay. All but one station recorded above 80 percent of average for the three-month period ending December 31st. Most stations in the northeast recorded below 80 percent of average monthly precipitation. However, all but four stations recorded above 80 percent of average for the three-month period ending December 31st. All but one streamflow station in northern Ontario reported above 70 percent of average flow levels at the end of the month using the criteria defined by the Ontario Ministry of Natural Resources. Southeastern Ontario generally received above 80 percent of average monthly precipitation, while areas south and west of Toronto received below or well below average amounts. Stations in southern Ontario generally recorded above 80 percent of average precipitation for the three-month period ending December 31st, with the exception of an area southeast of Lake Huron where a number of stations recorded below 50 percent of average. Abnormally dry (D0) conditions in the southwest persisted. Only two streamflow stations in southern Ontario recorded below 70 percent of average flow levels at the end of the month using the criteria defined by the Ontario Ministry of Natural Resources.

Precipitation across Quebec was generally near average for the month, with all stations near average for the period of September 1st to December 31st.

New Brunswick and Nova Scotia received near average precipitation for the month, with stations along the north coast near Prince Edward Island receiving slightly below average amounts. Stations on Prince Edward Island recorded amounts ranging from 50 to 85

percent of average. Southern Newfoundland received slightly below average monthly precipitation, grading to well above average in the north. The Atlantic provinces all received near or above average precipitation for the period from September 1 to December 31, with only a one station recording below 85 percent of average.

United States: December was much drier than normal across a broad swath of the country from the Southwest to the southern Plains, extending up the Ohio Valley to the southern and eastern Great Lakes, with 13 percent of the contiguous U.S. very dry. The December dryness aggravated long-term drought in the southern Plains to Lower Great Lakes and parts of the Ohio Valley. Long-term moisture deficits also persisted across parts of the West into the northern High Plains and central Plains.

In the Southwest, D0 was introduced into parts of central Arizona and an expansion of D1 was made across the southeastern part of the state. The NRCS (Natural Resources Conservation Service) National Water and Climate Center data showed both low elevation and high elevation stations at 0-40 percent of normal precipitation since the beginning of the Water Year for most of the state, following a below-average summer monsoon season in southern Arizona. Flagstaff has reported only a trace of snowfall so far this season, and only 2.26 inches of precipitation since the beginning of September. Snowbowl Ski Resort north of Flagstaff remained closed because of the lack of snow. An examination of USDA snowcourse/snotel station data in Arizona revealed that 31 of 33 sites, or 94 percent of them, were snow free on January 1, the most snow-free locations in at least the past 40 years.

Above-normal precipitation fell in the drought areas of the Pacific Northwest bringing improvement to the western U.S. drought percentages. About 14 percent of the western U.S. (Rockies westward) fell in the moderate to extreme drought category (as defined by the Palmer Drought Index) as of the end of December. The D2 area over Washington-Oregon was eliminated and D0-D1 was contracted. Aggregated reservoir levels in the West (provided by the USDA) reflected the long-term precipitation deficits in many states.

In the Arklatex region (southwestern Arkansas, southeastern Oklahoma, northeastern Texas), 2005 was the driest year in the 111-year record. In Texas, continuing dry conditions and slowly dropping lake levels prompted the Lower Colorado River Authority to ask Colorado River water users to conserve water voluntarily. State Extension agents noted that, in some counties soil moisture was very dry with rangelands and pastures in poor condition, stock ponds very low or completely dry, and livestock suffering. In Missouri, the Farm Service Agency reported that low ponds and dry streams were affecting livestock water supply. The ongoing drought put growing pressure on dwindling water supplies in some Arkansas communities. Reservoirs in the Fort Smith area had only a four-month supply of water according to media sources. This prolonged dry spell magnified the threat of wildfires in parts of the southern Plains. Dry, windy, and warmer-than-normal weather contributed to the outbreak of numerous grassfires in Oklahoma, Texas, and New Mexico in December and the beginning of January. According to media reports, more than half a million acres and more than 500 homes had

been burned. Burn bans were in effect across much of Texas at the end of December. D4 was introduced over the Arklatex with D3 expanding outward and into southern Texas. D2 and D1 also expanded across the southern Plains. In the Southeast, the recent wet pattern, cooler temperatures, less demand, and a modest recovery to the reservoirs in the region have led to the removal of D2 from North Carolina. Two straight weeks of precipitation during the month amounted to approximately 1 inch, allowing for removal of D1 in the central part of the State and substantial retraction of D0 throughout the entire State.

In Alaska, the December precipitation pattern at the primary stations was mainly drier than average in the interior southeast and extreme southwest coastal parts of the state, and wetter than normal in the north and along the remaining coastal areas. Across Hawaii, the precipitation and streamflow patterns were predominantly drier than average. For some Hawaiian stations, this was the third consecutive dry month. Areas including Anahola, Lihue and Mt. Waialeale had their driest December on record. D0 expanded to cover all of the Hawaiian islands, with D1 introduced across the western island of Kauai. In Puerto Rico, the precipitation signal was mostly dry, and streamflow averaged near normal. However, San Juan's total annual precipitation exceeded the previous record by a little over 2 inches with 76.62 inches recorded.

Mexico: December was the second consecutive month with below-normal precipitation across much of the country. The National Meteorological Service (SMN) ranked December 2005 as the 7th driest since 1941, only after December 1950, 1954, 2003, 1998, 1995 and 1996. Averaged across the nation, precipitation was 53 percent of climatology for the month. The dryness extended from Mexico into the United States across the Southwest and southern Plains. Some parts of southeastern Mexico received near normal to above-normal rainfall during December, as well as parts of Tamaulipas and Chihuahua in the north.

D0 expanded across most of northern and central Mexico this month. In the southeastern part of the country a spot of D0 was moved from Tabasco into Campeche in the Yucatan peninsula. D1 expanded along the coast of Sonora and Sinaloa, and D1 was added to Jalisco extending into northern Michoacan and southern Guanajuato. These two areas of D1 category are well reflected on the December NOAA soil moisture analysis. Since summer 2005 the last region (Lerma-Chapala basin) has been suffering from a dry trend which is reflected in below normal reservoir levels.

The official forecast indicates mostly temperatures above normal and precipitation below normal for the next three to four months; consequently, there is considerable concern about the possibility of an active wildfire season developing in the months ahead. The wildfire danger is particularly great over those portions of southeastern Mexico that received heavy rain from tropical cyclones Stan and Wilma, resulting in considerable growth of vegetation which serves as fuel for fires during dry weather. The SMN recommends caution in the use of available water especially in the Northwest and central-western Mexico, as well as caution when burning controlled fires.